

**AMENDMENTS TO THE CLAIMS**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims**

1. (Currently Amended) An unlicensed-radio access network for connecting a mobile station to a core network portion of a licensed-radio mobile network, said unlicensed- radio access network comprising: including  
an access controller connected to said core network portion,  
a broadband packet-switched network connected to said access controller; ~~and~~  
~~having~~  
a plurality of access points, each said access point defining at least part of a mini-cell coverage area and supporting an unlicensed-radio interface permitting communication between mobile stations located within a respective mini-cell and said access controller, wherein said access controller comprises  
a first link control relay module ~~(35)~~ for relaying packet service frames and  
a second transport protocol module ~~(32, 33)~~, ~~characterised by comprising~~  
a third link control module ~~(34)~~ arranged between said first and second modules for receiving packet service frames from said first link control relay module ~~(35)~~ determining a transmission priority assigned to each packet frame and forwarding said packet service frames to said first transport protocol module ~~(32,33)~~ in an order corresponding to said assigned transmission priority.
2. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 1, ~~wherein further characterised in that~~ said third link control module ~~(34)~~ comprises a plurality of buffers ~~(440)~~ for storing said packet service frames, each buffer corresponding to a specific transmission priority and being adapted to receive packet service frames of the specific transmission priority only.

3. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 2, ~~wherein further characterised in that~~ said third link control module ~~(34)~~ is further adapted to determine an acknowledgement mode of a packet service frame and to store a packet service frame assigned an acknowledgement mode in a buffer ~~(110)~~ for a period after transmission until acknowledgement said frame is received.

4. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 2 ~~or 3, wherein further characterised in that~~ said third link control module ~~(34)~~ comprises multiple sets ~~(111-114)~~ of said plurality of buffers ~~(110)~~, each set corresponding to a specific mobile station and being adapted to receive packet service frames destined for the specific mobile station only.

5. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 1 ~~any previous claim, wherein further characterised in that~~ at least one access point (20) is provided with a transport protocol module ~~(22, 23)~~, adapted to receive packet service frames from said access controller ~~(30)~~ and an unlicensed radio module ~~(11, 212, 213)~~ for exchanging packet service frames with a mobile station over an unlicensed-radio interface, ~~characterised in that~~ said access point further including ~~includes~~ a link control relay module ~~(24)~~ adapted to  
queue packet service frames received from said transport protocol module ~~(22, 23)~~,  
determine a transmission priority assigned to each packet frame and  
forward said packet service frames to said unlicensed radio module ~~(11, 212, 213)~~ in an order corresponding to said assigned transmission priority.

6. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 5, ~~wherein further characterised in that~~ said link control relay module ~~(24)~~ is further adapted to determine an acknowledgement mode of a packet service frame and to assign each packet service frame to an unlicensed-radio protocol with an equivalent acknowledgement mode.

7. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 1 ~~any previous claim, characterised in that wherein~~ said transport protocol modules provide for a datagram service over the Internet Protocol ~~(IP)~~.

8. (Currently Amended) The ~~[[An]]~~ access network as claimed in claim 7, wherein ~~further characterised in that~~ said datagram service is the User Datagram Protocol (UDP).

9. (Currently Amended) A mobile station adapted to exchange packet service frames with a core network portion of a licensed-radio mobile network via an unlicensed- radio access network, said mobile station comprising: including ~~comprising~~ a first link control module ~~(15)~~ for generating packet service frames and a second unlicensed- radio module ~~(14)~~ for exchanging packet service frames with an access point of said unlicensed-radio access network over an unlicensed-radio interface, ~~characterised in that said mobile station further comprises~~ a third link control module ~~(14)~~ arranged between said first and second modules for receiving packet service frames from said first link control module ~~(15)~~ determining a transmission priority assigned to each packet frame and forwarding said packet service frames to said second unlicensed-radio module ~~(14)~~ in an order corresponding to said assigned transmission priority.

10. (Currently Amended) The ~~[[A]]~~ mobile station as claimed in claim 9, wherein ~~further characterised in that~~ said third link control module ~~(14)~~ comprises a plurality of buffers ~~(140)~~ for storing said packet service frames, each buffer corresponding to a specific transmission priority and being adapted to receive packet service frames of the specific transmission priority only.

11. (Currently Amended) The ~~[[A]]~~ mobile station as claimed claim 10, wherein ~~further characterised in that~~ said third link control module ~~(14)~~ is further adapted to determine an acknowledgement mode of a packet service frame and to store

a packet service frame assigned an acknowledgement mode in a buffer (440) for a period after transmission until acknowledgement said frame is received.

12. (Currently Amended) A method in an unlicensed-radio access network for connecting a mobile station to a core network portion of a licensed-radio mobile network, said unlicensed-radio access network including  
an access controller connected to said core network portion,  
a broadband packet-switched network connected to said access controller and  
~~having a~~ plurality of access points, each said access point defining a mini-cell coverage area and supporting an unlicensed-radio interface permitting communication between mobile stations located within a respective mini-cell and said access controller, wherein said access controller comprises:

a link control relay module (35) for relaying packet service frames and  
a transport protocol module (32,33) ~~said method being characterised by in~~  
said access controller, receiving packet service frames from said link control relay module, determining a transmission priority assigned to packet frames destined for a mobile station and forwarding said packet service frames to said second transport protocol module in accordance with a first algorithm based on said assigned transmission priority.

13. (Currently Amended) The [[A]] method as claimed in claim 12, further comprising ~~further characterised by~~ the steps of:

in said access controller determining an acknowledgement mode of a packet service frame received from said link control relay module and  
storing a packet service frame assigned an acknowledgement mode for a period after transmission until acknowledgement said frame is received.

14. (Currently Amended) The [[A]] method as claimed in claim 12 ~~or 13~~, further comprising ~~characterised by~~ the steps of:

in said access controller determining the destination mobile station of packet service frames received from said link control relay module and

applying a second algorithm to select among packet service frames destined for different mobile stations before applying said first algorithm.

15. (Currently Amended) The ~~[[A]]~~ method as claimed in claim 12 ~~any one of claims 12 to 14~~ further comprising ~~characterised by~~ the steps of:

in an access point, receiving packet service frames from said access controller, determining the assigned destination priority of said packet service frames; and ~~and~~:

forwarding said packet service frames to a mobile station in an order defined by a third algorithm based on destination priority.

16. (Currently Amended) The ~~[[A]]~~ method as claimed in claim 12 ~~any one of claims 12 to 15~~, further comprising ~~characterised by~~ the steps of:

in an access point, receiving packet service frames from said access controller, determining an acknowledgement mode of a packet service frame; and, ~~and~~

assigning each packet service frame to an unlicensed-radio protocol with an equivalent acknowledgement mode.